SONY

3-754-543-13 (1)

English

Video Cassette Recorder

Operating Instructions

SLV-X37

VHS

© 1992 by Sony Corporation

English

WARNING

To prevent fire or shock hazard, do not expose the VCR to rain or moisture.
To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only.

Caution
Television programs, films video tapes and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws.

Precautions

Safety
- Depending on the area the SLV-X37 comes in two models to suit the local operating power voltage.
  Type 1 model operates on 120V AC, 60 Hz.
  Type 2 model operates on 110-240 V AC, 50/60 Hz
- If anything falls into the cabinet, unplug the VCR and have it checked by qualified personnel before operating it any further.
- Unplug the VCR from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug, never pull the cord itself.

Installation
- Allow adequate air circulation to prevent internal heat build-up.
- Do not place the VCR on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the VCR near hear sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the VCR in a vertical position, it is designed to be operated in a horizontal position.
- Keep the VCR and cassette tapes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Do not place heavy objects on the VCR.

Operation
- When the VCR is not in use, turn the power off to conserve energy and to extend its life.
- Remove and store video cassettes after recording or playback.

Cleaning
- Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution.
- Do not use any type of solvent, such as alcohol or benzine.

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How to Use This Manual

This manual is divided into five chapters.
The chapters and their contents are as follows.:

Introduction **(page 3)**
Getting Started **(page 4)**
Basic Operations **(page 13)**
Advanced Operations **(page 22)**
Additional Information **(page 25)**

For information about the VCR's basic operations, such as Playback (page 13), Recording TV program (page 16), or Timer Recording (page 18), see **Basic Operations.**
If you are already familiar with the basic operations, see **Advanced Operations.** If you have any problems in operating the VCR, refer to Troubleshooting. If your VCR is in need of repair, contact your local Sony service facility.

Conventions of This Manual

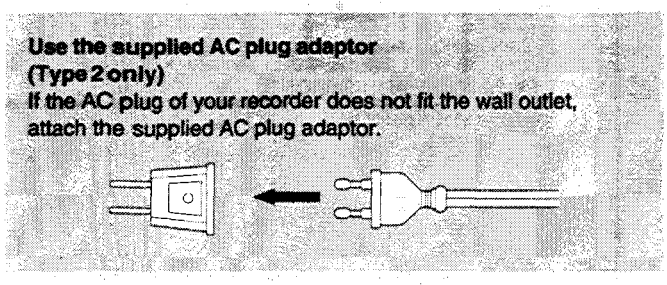
This manual explains operations using the VCR Remote Commander. However, the buttons on the VCR with the same name or mark as those on the Remote Commander function exactly the same as those on the Remote Commander.
When you are reading through the manual, remember:

- Buttons and switches are shown in uppercase letters. Example: Press PLAY.
- Numbers in the illustrations correspond to numbers in the text.
- ⇨ indicates signal flow.

Unpacking

Check that you have received the following accessories:

- Wireless Remote Commander (1)
- Size AA (R6) batteries (2)
- External antenna connector (1)
- 75-ohm coaxial cable with F-type connectors (1)
- AC power cord (1)
- AC plug adaptor (Type 2 model only) (1)


Use the supplied AC plug adaptor (Type 2 only)
If the AC plug of your recorder does not fit the wall outlet, attach the supplied AC plug adaptor.

Overview

The Sony Video Cassette Recorder (VCR) incorporates High Quality (HQ)* picture technology, and features various convenient functions for playback, recording, and editing. For example, quick and easy access is a "must" during playback and editing; therefore, this VCR incorporates a DUAL MODE SHUTTLE ring. You can easily advance and rewind the tape to locate a desired scene by simply turning the ring.

***HQ:** VCRs with this marking incorporated VHS high-quality technology and are compatible with any video cassette recorders bearing the VHS mark.

Connecting Peripheral Equipment

Checking Your TV Connections

Whenever you view video pictures as well as TV programs on your TV screen, connect the VCR and your TV properly. The connection between the VCR and TV varies depending upon the type of your TV receiver and antenna.
First check the type of your TV, and use the appropriate instructions in this section.

Before making connections do the following
- Turn off the power to the VCR and the TV.
- Do not connect the AC power cords until all of the connections are completed.
- Make sure that all connections are firm. Loose connections may cause picture distortion.
- If your TV does not match the following examples, consult your nearest Sony dealer or qualified technician.

Connecting the VCR to a TV

How you connect your VCR to your TV depends on the type of TV you have.
Before doing step 3 to 5, check to see if your TV has:

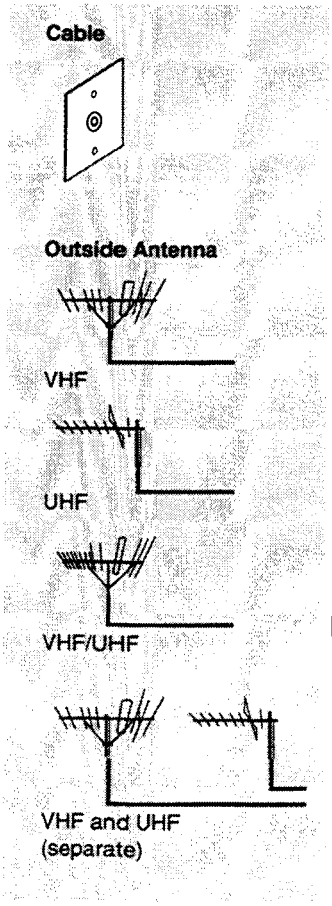
- audio/video input jacks
- a 75-ohm VHF/UHF antenna terminal
- VHF and UHF separate antenna terminals

1 Find the type of antenna or cable you have in the illustration below: a cable system (which takes the place of an antenna), an outside antenna, or an inside antenna (rabbit ears).

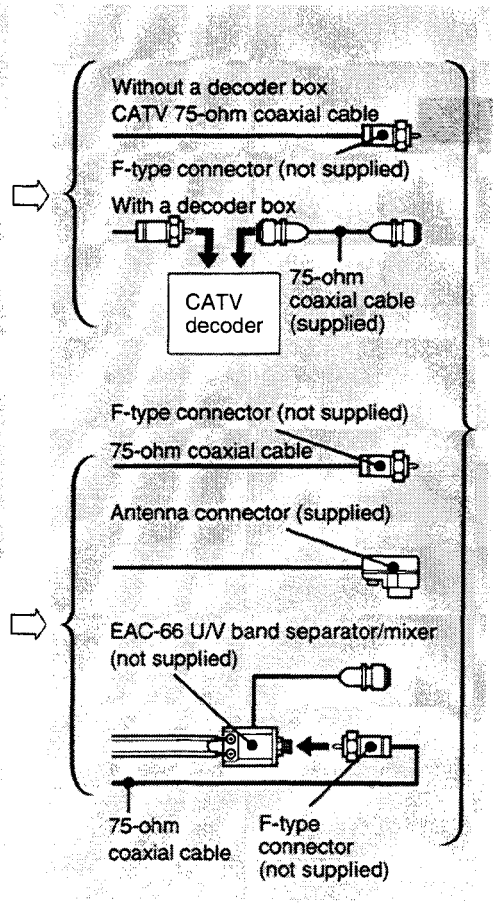
2 Find the type of connector you are using in the illustration below.

3 Attach the connector to the VHF/UHF IN terminal on the back of the VCR. Make sure your TV has audio/video input jacks if you attach the connector to the AUDIO/VIDEO output jacks on the VCR.

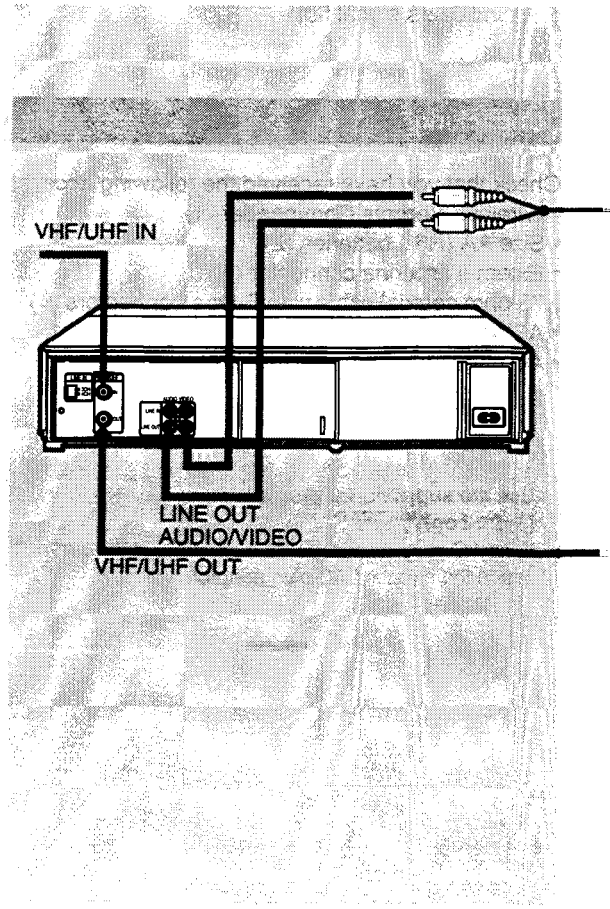
Types of antenna/cable



Types of connectors



Back of VCR



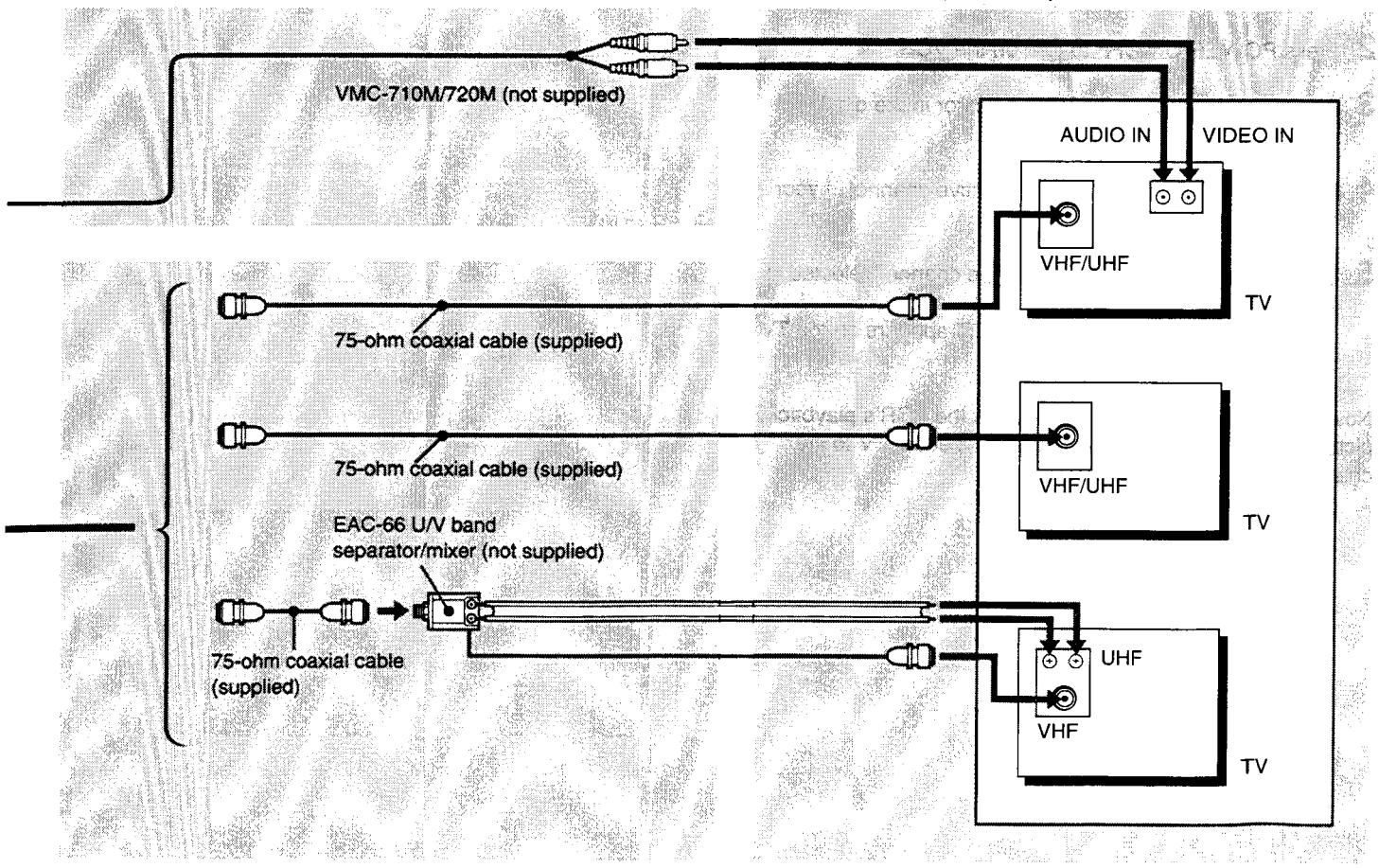
Connecting an Antenna or Cable to the VCR

How you connect an antenna to the VCR depends on the type of antenna you have.
Before doing steps 1 to 3 check to see if you have:
- an outdoor antenna
- an indoor antenna
- a cable system

4 Find the type of antenna terminals or audio/video jacks you have on the back of your TV (see the illustration under step **5**).
Attach the connector(s) you are using (see the illustration below) to the back of the VCR (see the illustration under step **3**).

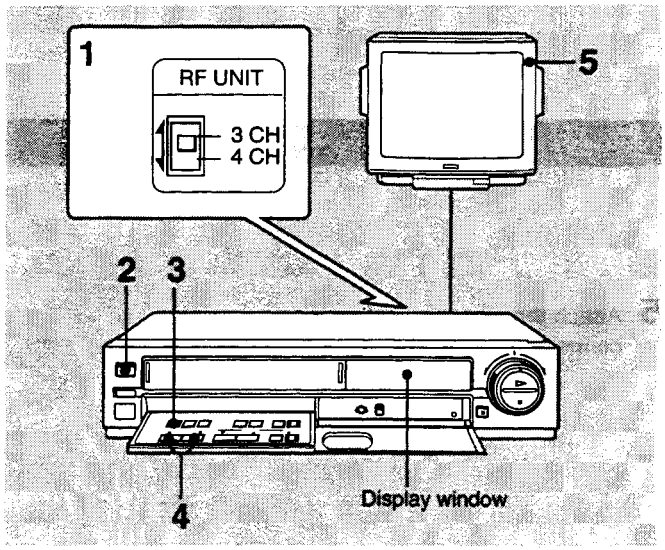
5 Attach the other end of the connector(s) to the back of the TV.

Types of connectors **Antenna terminals (back of TV)**



Tuning the VCR to Your TV

You must set the RF UNIT selector at the rear of the VCR correctly so that your TV can receive the correct signal from your VCR. Set the selector to 3 CH (channel 3) or 4 CH (channel 4), whichever is not active in your area.
If you connect a TV or a color monitor equipped with video/audio input jacks, skip this adjustment.



1 Set the RF UNIT selector on the rear of the VCR to 3 CH or 4 CH, whichever is not active in your area.

2 Press POWER ON/OFF to turn on the VCR.

3 Press TV/VTR to light the VTR indicator in the display window.

4 Press CHANNEL +/– to select an active channel in your area.

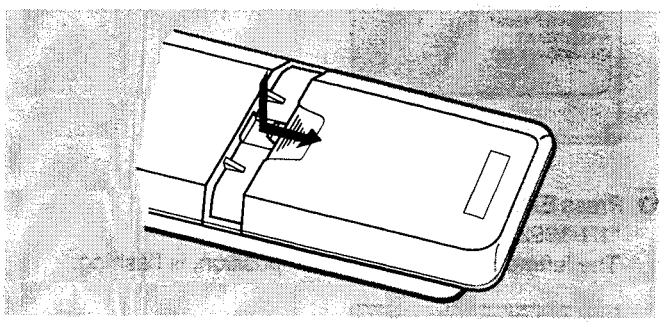
5 Turn on the TV and set the TV to the channel selected in step 1.
The TV program selected on the VCR appears on the TV screen.

Now you have tuned your TV to receive the VCR's playback picture. When you play back a cassette, set the TV to the channel selected above.

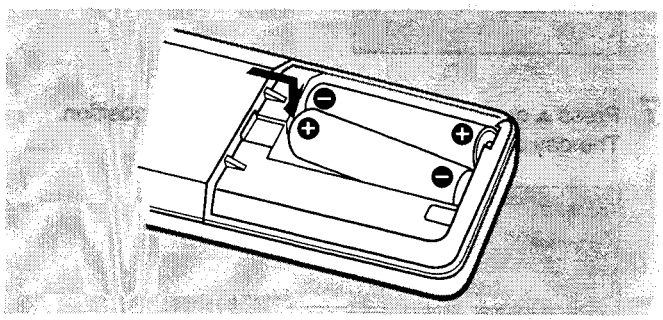
Preparing the Remote Commander

Inserting Batteries

1 Slide open and remove the cover.



2 Insert two size AA (R6) batteries so that the + and – polarities match the polarity diagrams inside the battery compartment.



3 Replace and close the cover.

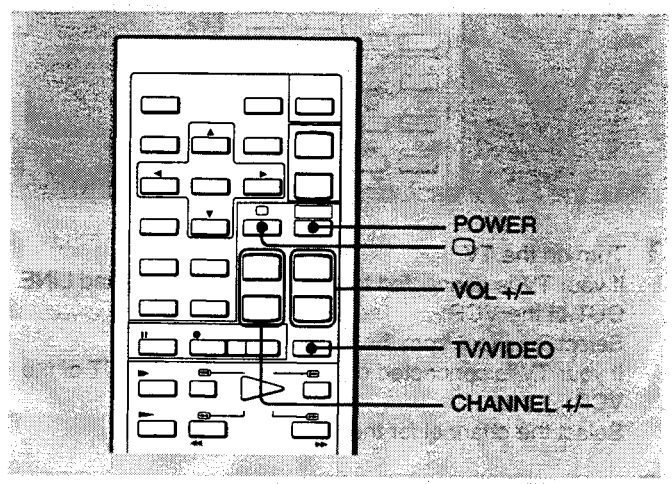
Note:
With normal operation, batteries last for approximately six months. If the Remote Commander will not be used for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

How to Use the Remote Commander

When you operate the VCR using the Remote Commander, point it at the remote sensor located on the VCR. For the location of the remote sensor, see "Identifying Parts and Controls" on page 25.

How to Control Your TV with the Remote Commander

This Remote Commander can also control your Sony TV. Buttons used to control the TV are shown below.



POWER: Press to turn the power of the TV on and off.

🖵: If the power of the TV is not turned on by pressing POWER, press this button to turn it on.

VOL +/–: Press to increase (+) or decrease (–) the volume of the TV.

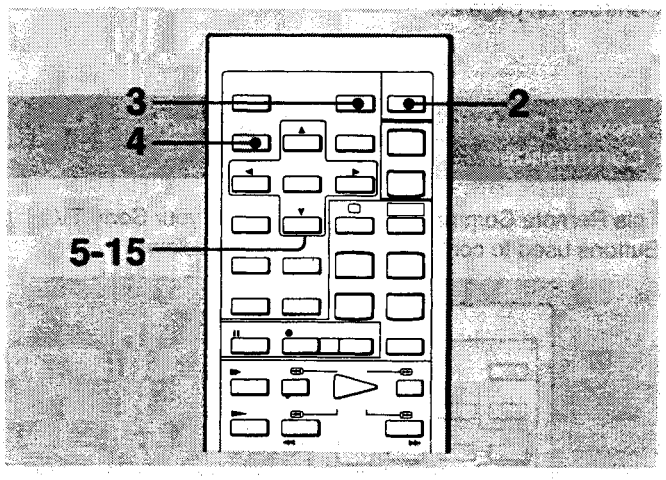
TV/VIDEO: Press to select the input of the TV: TV program broadcasts from the antenna or playback signal from the VCR.

CHANNEL +/–: Press to change the channel position of the TV.

Setting the Time and Date Clock

You can set the VCR time and date clock on the TV screen using the Remote Commander.

Example: To set to 15:30, November 27, 1992

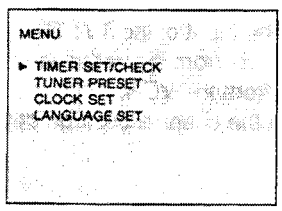


1 Turn on the TV
If your TV is connected to both VHF/UHF OUT and LINE OUT of the VCR:
Select the input from the VCR.
If your TV is connected only to the VHF/UHF OUT of the VCR:
Select the channel for the VCR (channel 3 or 4).

2 Press POWER to turn on the VCR.

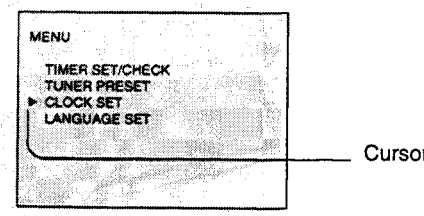
3 Press TV/VTR to light the VTR indicator
(Only used for TVs without video/audio input jacks)

4 Press MENU.
The main MENU appears on the TV screen.

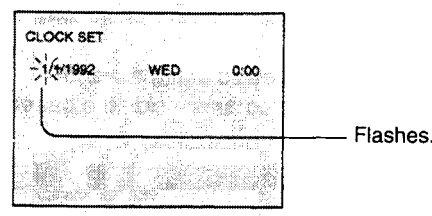


Note:
The initial language setting for this VCR is SPANISH (ESPAÑOL). To switch the setting to English, press or to move the cursor to SELECCIÓN DEL IDIOMA (LANGUAGE SET), then select INGLÉS (ENGLISH).

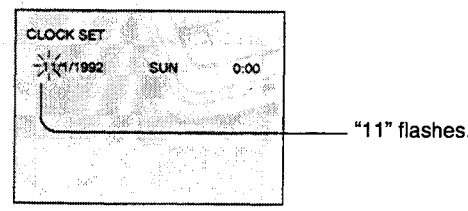
5 Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.



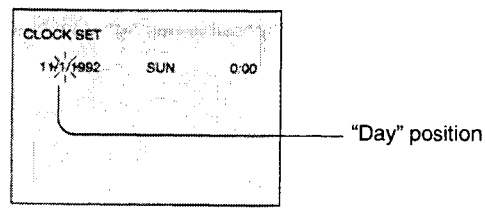
6 Press EXECUTE.
"1/1/1992 WED 0:00" appears
The leftmost "1", in the "month" position, is flashing.



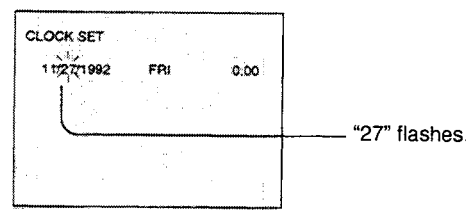
7 Press ▲ or ▼ until "11" appears in the month position.
The day of the week is automatically set.



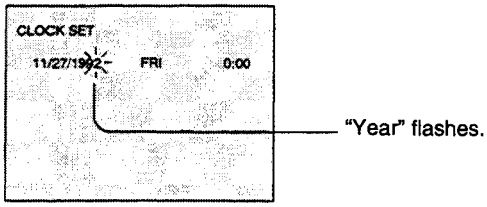
8 Press ▶ to make the "day" position flash.



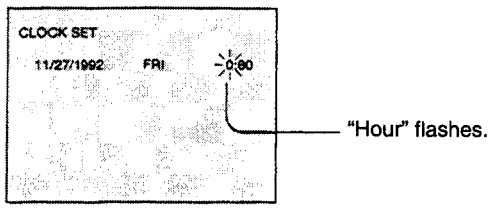
9 Press ▲ or ▼ until "27" appears in the day position.



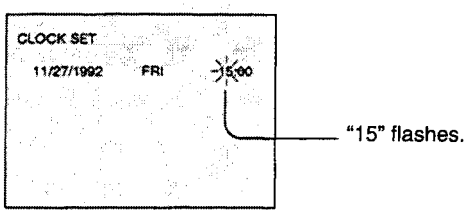
10 Press ▶ to make the "year" position flash.
If you want to change the year, press ▲ or ▼.



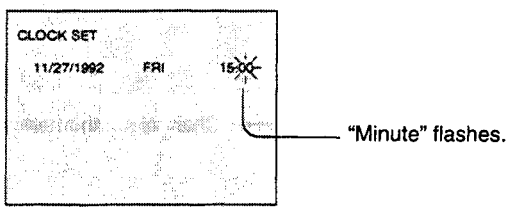
11 Press ▶ to make the "hour" flash.



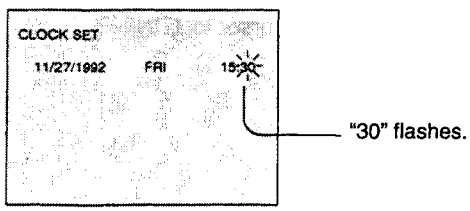
12 Press ▲ or ▼ until "15" appears in the hour position.



13 Press ▶ to make the "minute" flash.



14 Press ▲ or ▼ until "30" appears in the minute position.



15 Press EXECUTE.
The clock is set to 15:30.

To Recall the Time and Date on Screen

Press MENU to display the main MENU, select CLOCK SET and press EXECUTE. To return to the original screen, press MENU.

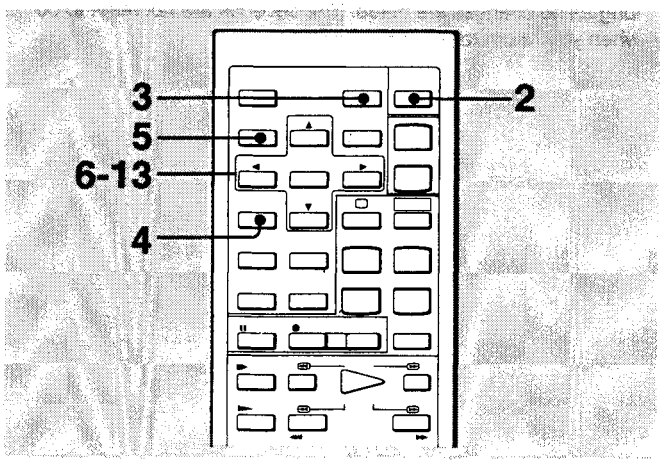
Notes:

- You can set the clock except during timer recording, timer recording standby, and quick-timer recording.
- When the time and date are displayed, the clock keeps running as long as no changes are made. The seconds are not reset to 00 when you return to the original screen.

Presetting the Active Channels

This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69, and CATV channels A-6 to A-1, A to W, W+30 to W+84. These channels can be preset using the Remote Commander and the TUNER PRESET display. To watch and record TV programs, you must preset the channels on the VCR using the CHANNEL +/– buttons.

Presetting Desired Channels

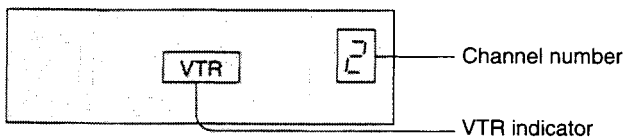


1 Turn on the TV.
If your TV is connected to both VHF/UHF OUT and LINE OUT of the VCR:
Select the input from the VCR.
If your TV is connected only to the VHF/UHF OUT of the VCR:
Select the channel for the VCR (channel 3 or 4).

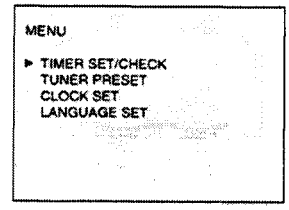
2 Press POWER to turn on the VCR.

3 Press TV/VTR to light the VTR indicator.
(Only used for TVs without video/audio input jacks)

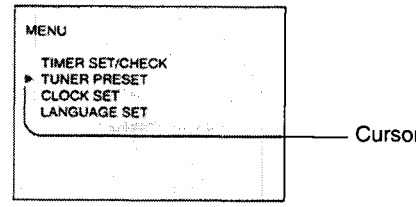
4 Press INPUT SELECT so that the channel number appears in the display window.



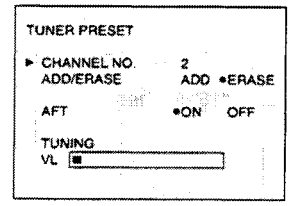
5 Press MENU.
The main MENU appears on the TV screen.



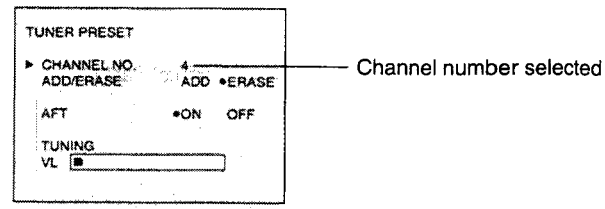
6 Press ▲ or ▼ to move the cursor (▶) to TUNER PRESET.



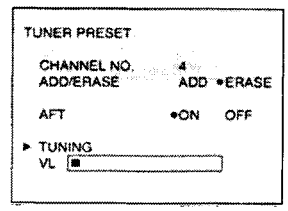
7 Press EXECUTE.
The TUNER PRESET display appears.



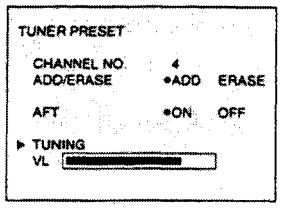
8 Press ◀ or ▶ to select the desired channel position number.



9 Press ▲ or ▼ to move the cursor to TUNING.

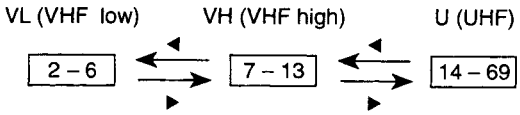


10 Press ◀ or ▶ to tune in the desired channel.
The picture appears when the first channel received in your area is detected, and the channel is preset to the selected channel position.
If ERASE has been selected, ADD/ERASE is switched to ADD automatically, and the screen returns to the blue background after an interval of 5 seconds.



11 If the channel detected in step 10 is not the desired one, press ◀ or ▶ until the picture of the desired channel appears.

Note:
When you keep ◀ or ▶ pressed, the channels are scanned in the following order:



12 Press ▲ to move the cursor to CHANNEL NO., and repeat steps 8 to 11 to preset other channels to other channel positions.

13 Press EXECUTE when all the desire channels have been preset.
The display returns to the original screen with the tape counter.

How to Receive CATV

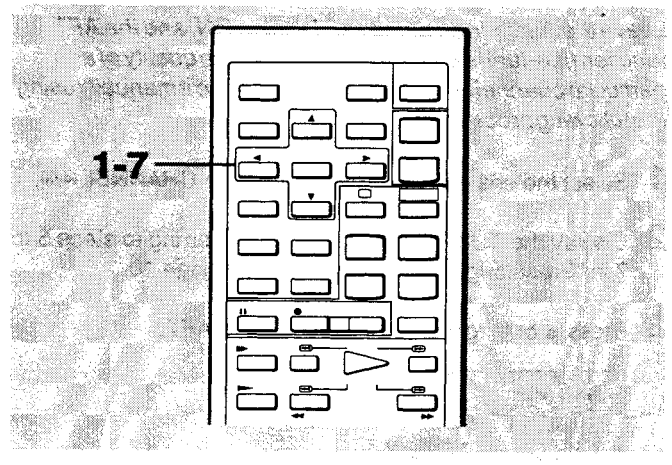
Preset the CATV channels referring to the following CATV channel assignment chart.
For presetting CATV channels, follow steps in "Prestting Desired Channels" above.

CATV channel assignment chart

VL (VHF low)	2 to 6, A-6 to A-1, A
VH (VHF high)	B to I, 7 to 13, J to W
U (UHF)	W+30 to W+84

Note:
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

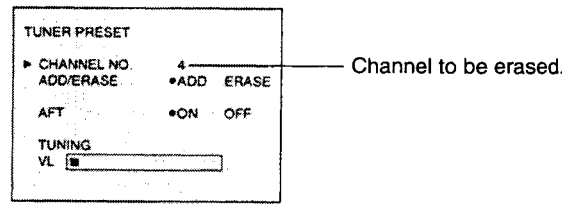
Disabling Unwanted Channels



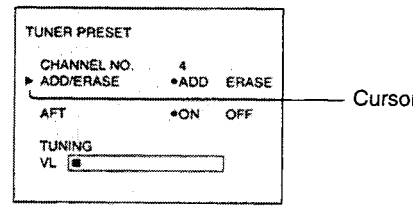
1 Call up the TUNER PRESET menu on the TV screen.
Follow steps 5 to 7 in "Presetting Desired Channels" on page 10.

2 Press ▲ or ▼ to move the cursor (▶) to CHANNEL NO.

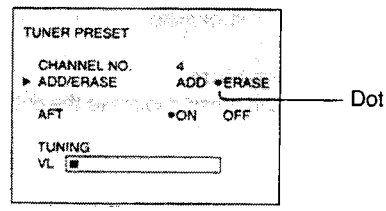
3 Press ◀ or ▶ to select the channel number to be disabled.



4 Press ▲ or ▼ to move the cursor to ADD/ERASE.



5 Press ▶ to move the dot (•) to ERASE.



6 Repeat steps 2 to 5 to disable other channels.

7 Press EXECUTE.
When pressing CHANNEL +/–, the disabled channels are skipped.

To reactivate a disabled channel
Select ADD instead of ERASE in step 5 above.

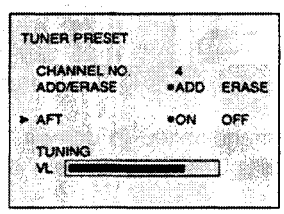
Fine-tuning

Leave the Auto Fine Tuning (AFT) set to ON, and the AFT function fine-tunes the picture. If the picture quality of a particular channel is unacceptable, fine-tune it manually using the following procedure.

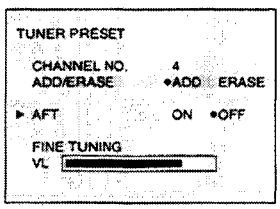
1 Select the channel to be fine-tuned with CHANNEL +/–.

2 Display the TUNER PRESET menu referring to steps 5 to 7 in "Presetting Desired Channels" on page 10.

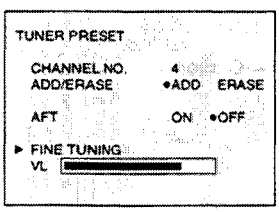
3 Press ▲ or ▼ to move the cursor (▶) to AFT.



4 Press ▶ to move the dot (•) to OFF.
FINE TUNING appears.



5 Press ▲ or ▼ to move the cursor to FINE TUNING.
The picture appears.



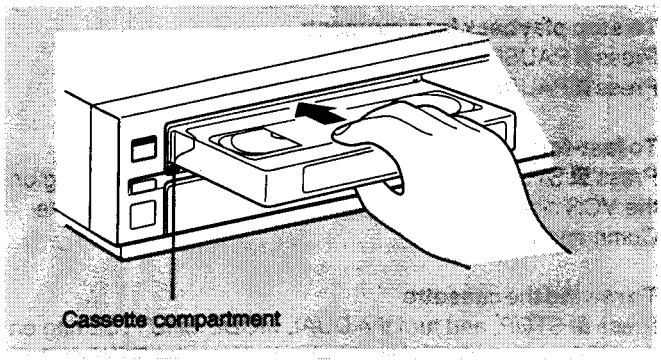
6 Press ◀ or ▶ until you get the best picture.

If you are still unable to get a better picture
Press ▲ to move the cursor to AFT, and press ◀ to move the dot (•) to ON.

7 Press EXECUTE.

Playback

Inserting a Video Cassette

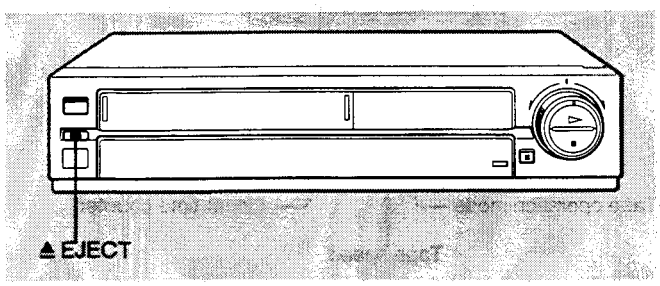


1 Insert a video cassette as shown above.

2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment. When the cassette has been loaded, the cassette indicator lights in the display window and the VCR turns on automatically.

Note:
If you insert a cassette without a safety tab, playback starts automatically (AUTO PLAYBACK function).

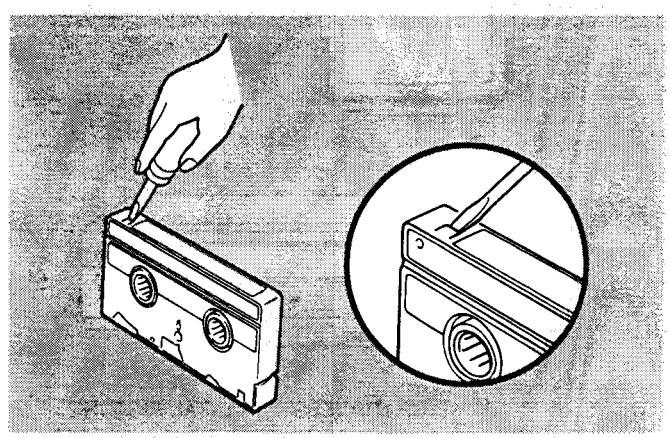
Ejecting the Video Cassette



Press ▲ EJECT on the VCR.
You can eject the cassette even when the power is off, so long as the AC power cord is plugged into the wall outlet. When you press ▲ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Protecting Your Cassette against Accidental Erasure

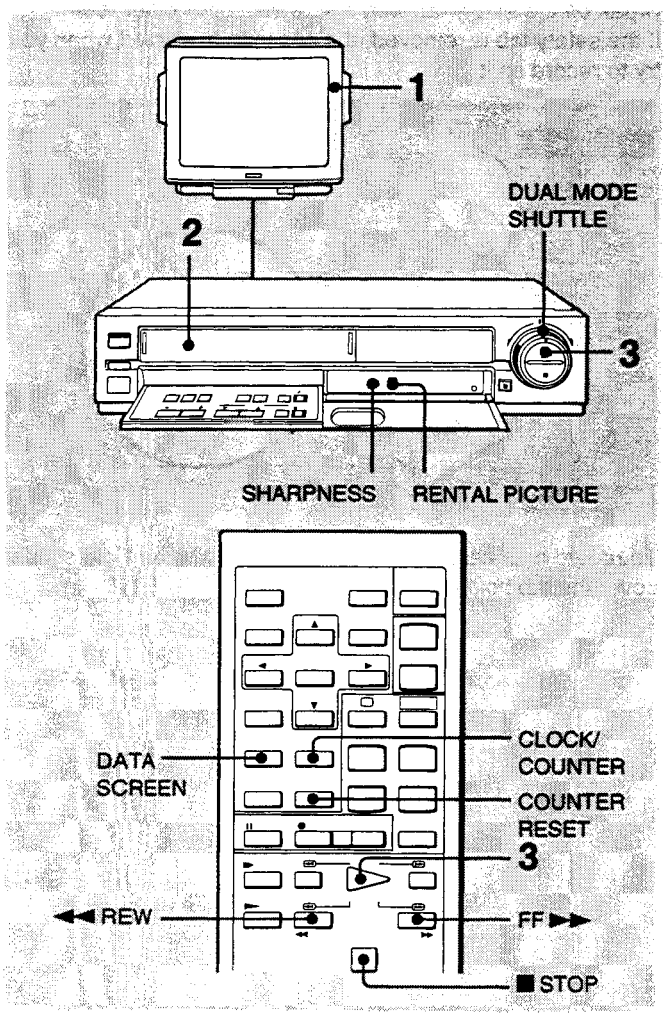
Cassettes have a safety tab to protect against accidental recording.
Break off the safety tab with a screwdriver or other tool.
If the safety tab is removed, the cassette is ejected when you try to record on it.



To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.

Playing Back a Cassette

Before playing back a cassette, check that all the connections are firm and made correctly.



1 Turn on the TV.
If your TV is connected to both VHF/UHF OUT and LINE OUT of the VCR:
Select the input from the VCR.
If your TV is connected only to the VHF/UHF OUT of the VCR:
Select the channel for the VCR (channel 3 or 4)

2 Insert a cassette.
The VCR automatically turns on.

3 Press ► PLAY.
Playback begins.
When the tape reaches the end, the VCR automatically rewinds the tape to the beginning (auto rewind). The power of the VCR remains ON.

Note on tapes recorded in LP mode
Playback of tapes recorded in LP mode is also possible with this VCR. However, playback in modes other than forward playback in normal speed is not guaranteed.

To stop playback:
Press ■ STOP.

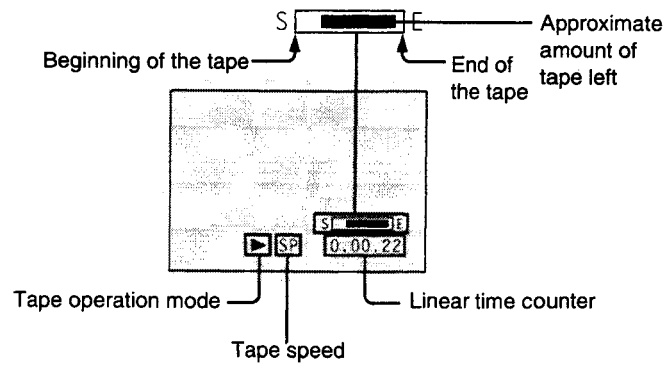
To stop playback for a moment:
Press II PAUSE.
Press II PAUSE again to resume playback.

To fast-forward the cassette during stop mode
Press ■ STOP, and turn the DUAL MODE SHUTTLE ring on the VCR clockwise (►►), or press FF ►► on the Remote Commander.

To rewind the cassette
Press ■ STOP, and turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise (◄◄), or press ◄◄ REW on the Remote Commander.

To start playback automatically after rewinding the cassette
Turn the DUAL MODE SHUTTLE ring on the VCR to the left (◄◄).
While holding the ring, press ► PLAY on the VCR.
During rewind, the AUTO indicator lights up in the display window.

About the Data Screen
To display the data screen on the TV, press DATA SCREEN on the Remote Commander.



Notes:
- The remaining tape length displayed is approximate. Therefore, use it only as an approximate reference.
- When you insert a short video cassette tape such as a T-20, T-30 or non-standard commercially available video cassette tape, the remaining tape length indicator may not function correctly.
- The data screen can only be called up when in normal playback mode.

Resetting the Tape Counter

The tape counter in the display window helps you to locate a certain scene after playback. Press COUNTER RESET to set the counter to the "0H00M00S" (counter zero) position before playing back the tape (the tape counter is automatically reset to zero whenever a cassette is inserted.) The VCR keeps counting the length of the tape being played back. Note, however, that the tape counter does not count the positions without video signals recorded.

Note:
If the display window shows the current clock, not the tape counter, press CLOCK/COUNTER on the Remote Commander to switch the display to tape counter.

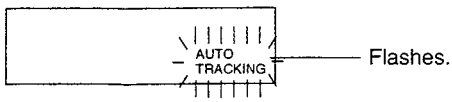
Enhancing Picture Quality

To reduce streaks and/or snow
Select RENTAL PICTURE on the VCR.

To adjust the sharpness of the picture
Turn SHARPNESS control on the VCR to SHARP for a sharper picture or to SOFT for a softer picture.

To adjust tracking
Normally you can get optimum tracking since the auto tracking function activates in the following cases:
- when the cassette is loaded for the first time.
- when the recording mode on the playback tape is switched between SP and EP. (See page 17 for the recording mode.)
- when the picture is distorted by scratches on the tape.
- when the AUTO TRACKING indicator is turned on by pressing TRACKING AUTO/MANUAL after the picture is adjusted manually.

The AUTO TRACKING indicator flashes while the VCR is searching for the best tracking condition, and lights when the best possible playback picture is obtained.

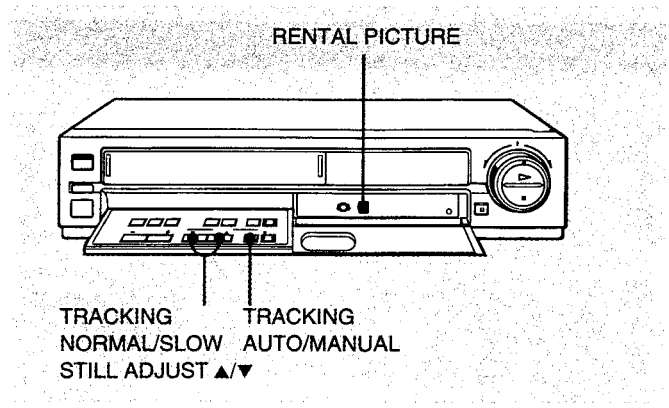


When streaks or snow noise appear on the picture, adjust the picture manually. (For details, see 'To adjust tracking manually'.)

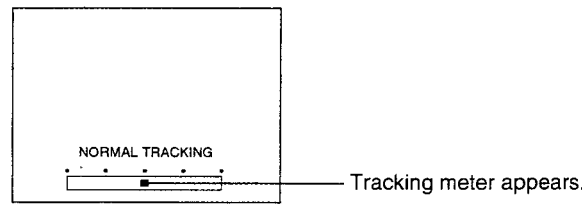
Auto head cleaner
The auto head cleaner built into the VCR automatically cleans the video heads when a cassette is loaded or unloaded. If the effect of head cleaning is not sufficient even after a cassette has been loaded/unloaded several times, clean the heads using the Sony T-25CL video head cleaning cassette.

Playing Back a Cassette Recorded on another VCR

When playing back a cassette recorded on another VCR, the tracking condition is automatically adjusted. You can also adjust the tracking condition and the sharpness manually according to the following instructions.



To adjust tracking manually
Press either ▲ or ▼ for the best possible picture. The tracking meter appears on the TV screen and the AUTO TRACKING indicator turns off.
When manual adjustment proves unsatisfactory, press both of the TRACKING NORMAL/SLOW and STILL ADJUST. The tracking condition indicator returns to the center position.



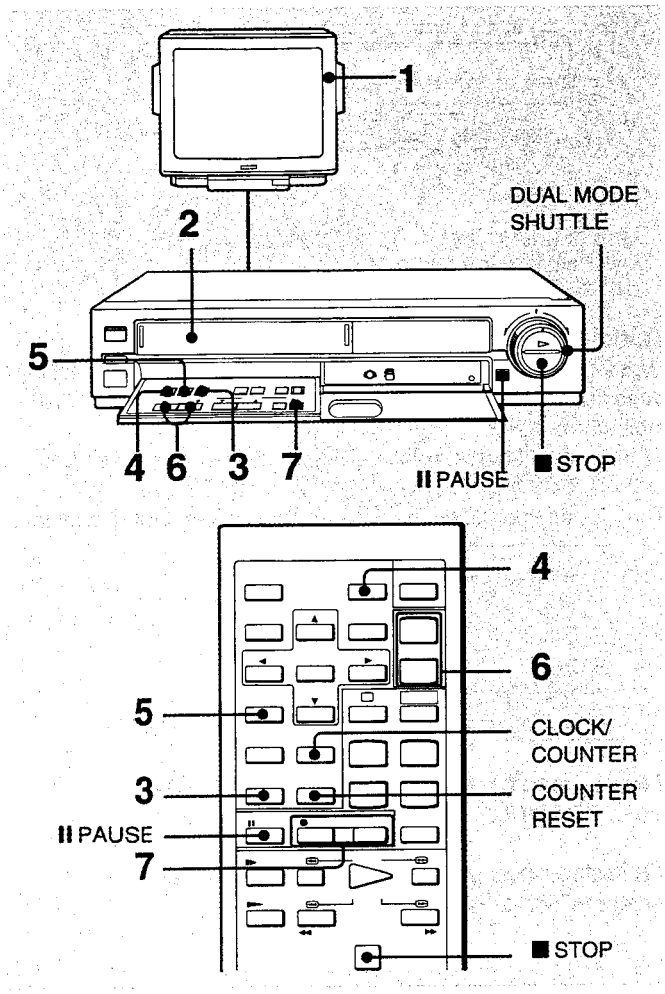
To return to the auto tracking adjustment
Press TRACKING AUTO/MANUAL.

To reduce playback streaks and/or snow
Select RENTAL PICTURE on the VCR.

Recording

This section shows you how to record TV programs. You can also watch a TV program on the TV screen while recording another.
Before recording, check to see that all the connections have been made correctly.

Recording TV Programs



1 Turn on the TV.
If your TV is connected to both VHF/UHF OUT and LINE OUT of the VCR:
Select the input from the VCR.
If your TV is connected only to the VHF/UHF OUT of the VCR:
Select the channel for the VCR (channel 3 or 4)

2 Insert the cassette.
The VCR turns on automatically.

3 Press TAPE SPEED to select the recording tape speed, SP or EP.

4 Press TV/VTR to light the VTR indicator in the display window.
Skip this step if your TV is connected to both VHF/UHF OUT and LINE OUT of the VCR.

5 Press INPUT SELECT to light the channel number indicator in the display window.

6 Select the channel to be recorded with CHANNEL +/–.

7 Press the two ● REC buttons on the Remote Commander simultaneously, or the ● REC button on the VCR.
Recording starts.
When the tape reaches the end, the VCR automatically rewinds the tape, and the power remains on.

To pause recording:
Press II PAUSE.

To stop recording:
Press ■ STOP.

To turn off the data screen information
Press DATA SCREEN on the Remote Commander.
To display it again, press DATA SCREEN.
Data screen information is not be recorded on the tape.

The remaining tape length indicator
- The remaining tape length shows the approximate length of tape left.
- When you insert a short tape such as a T-20, T-30 or a non-standard commercially available tape, the remaining tape length indicator may not function correctly.

Maximum Recording Time of a Cassette

Recording in the SP or EP is possible with this VCR. When recording, select the desired recording mode (SP or EP) with TAPE SPEED.
During playback, the VCR automatically detects the recording format, and then plays back the cassette in the appropriate mode.
A cassette recorded in the EP mode runs three times as slowly as a tape recorded in the SP mode. Refer to the chart below for the recording/playback time available in each mode.

Note:
Recording cannot be done in LP mode.

Cassette Tape	Recording/Playback time	
	SP mode	EP mode
T-160	2 hr. 40 min.	8 hr.
T-120	2 hr.	6 hr.
T-60	1 hr.	3 hr.
T-30	30 min.	1 hr. 30 min.

Watching One Program While Recording Another

1 Press TV/VTR to turn off the VTR indicator in the display window.

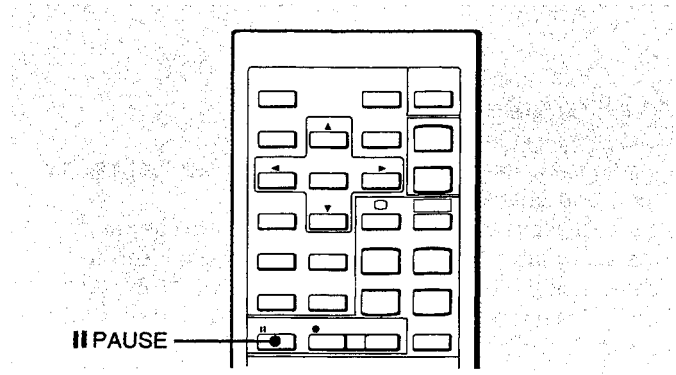
2 Select the channel you want to watch on the TV.

What the VTR indicator means
When the VTR indicator is lit, the channel selected on the VCR or the cassette being played back on the VCR is shown on the TV screen.
When the VTR indicator is turned off, the channel selected by the TV is shown on the TV screen.

If you use a color monitor
You cannot watch another program during recording unless the monitor has an internal TV tuner.

Editing Out Unwanted Scenes

While recording



1 Press II PAUSE when an unwanted scene appears Recording stops.

2 Press II PAUSE again to resume recording at the desired scene.

Note:
When the recording pause mode lasts for approximately 5 minutes or more, the VCR enters the stop mode.

Timer Recording

The Timer Recording function allows you to preset your VCR to record up to eight programs within a one-month period. You perform this procedure from the TIMER SET/CHECK screen on your TV.

As a First Step

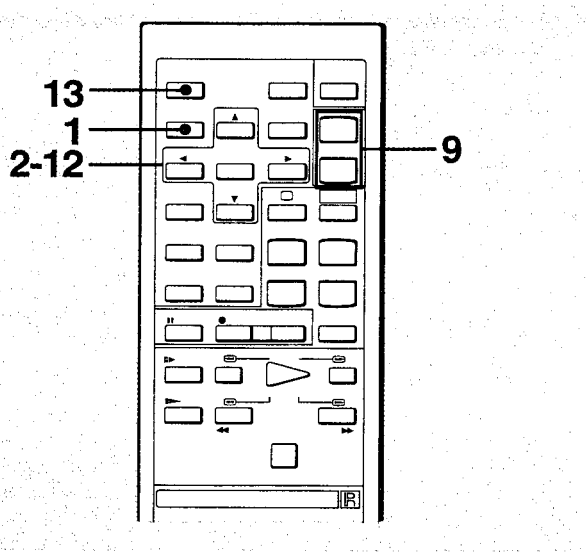
Before setting the timer, make sure that:

- the time and date clock is set correctly. (See "Setting the Time and Date Clock" on page 8.)
- the cassette is long enough to record all the programs.
- the safety tab on the cassette is intact. If you insert a cassette with no safety tab and press TIMER REC (ON/OFF), the cassette is automatically ejected from the VCR.
- the VCR and the TV are both turned on.

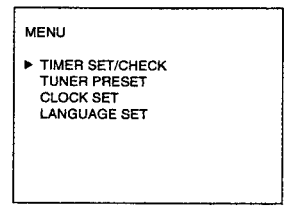
Setting the Timer

Example:

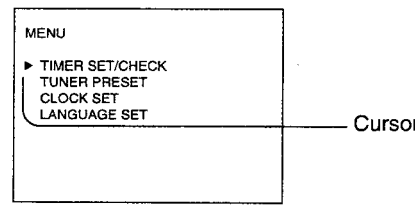
Here's how to record a program broadcast on channel 26 from 20:00 to 21:55 on Friday, November 27, 1992 in SP mode.



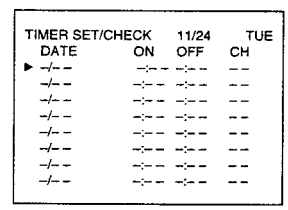
1 Press MENU.
The main MENU appears.



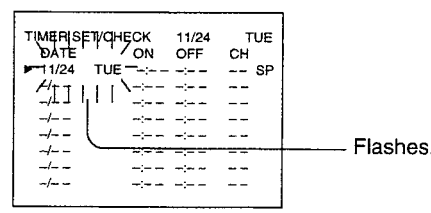
2 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.



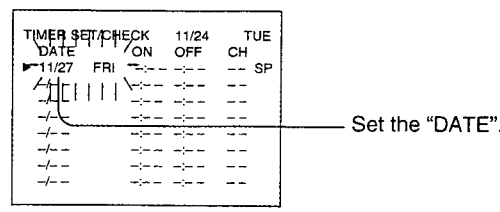
3 Press EXECUTE.
The TIMER SET/CHECK display appears on the screen. To reset the clock, refer to "Setting the Time and Date Clock" (page 8).



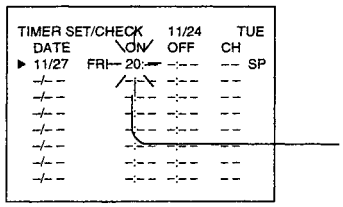
4 Press ▶ to make sure that today's date is flashing. If it isn't, reset the clock to the correct time. See "Setting the Time and Date" (page 8).



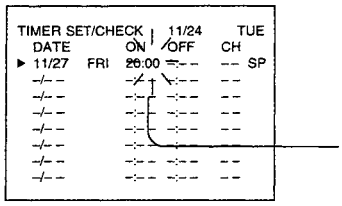
5 Press ▲ to set the month and date to 11/27 FRI.
The day of the week is automatically set.



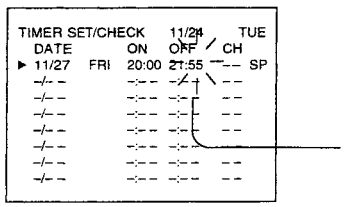
6 Press ▶ to make the hour section under "ON" flash and then ▲ or ▼ until "20" appears.



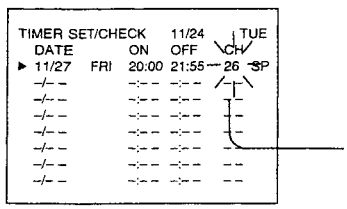
7 Press ▶ to make the minute section under "ON" flash and then ▲ or ▼ until "00" appears.



8 Press ▶.
The end time flashes under "OFF".
Set the turn-off time referring to steps 6 and 7.

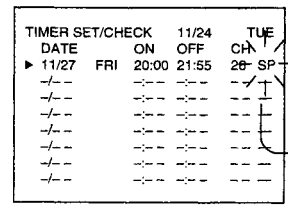


9 Press ▶ to make the CH section flash, then press ▲ or ▼ until 26 appears.
Only the channels set in the VCR appear. You can also use the CHANNEL +/–.

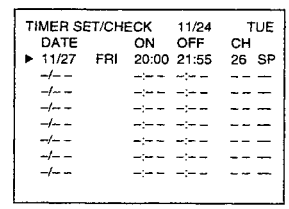


Note:
To record video sources from the LINE IN jack, press INPUT SELECT to display LINE under the "CH" position. The cursor returns to channel numbers on the second press.

10 Press ▶ or press TAPE SPEED to make the recording speed (SP or EP) flash and then ▲ or ▼ so that SP appears.



11 Press ▶ to store the setting.
When all of the settings stop flashing you have completed the setting. To preset another program, move the cursor to the next line and repeat steps 4 to 11.



12 Press EXECUTE.

13 Press TIMER REC (ON/OFF).
The VCR is in now in standby mode for timer recording and the TIMER REC indicator appears in the display window. If no cassette has been inserted or the tape is at the end, the TIMER REC indicator does not appear.

When you set the VCR to the timer recording standby mode, you can record any previously preset programs. The VCR turns on automatically to record the first preset program. When it finishes recording, the power automatically shuts off.

To stop timer recording:
Press TIMER REC (ON/OFF).

Notes:
- To change or correct a setting before pressing EXECUTE, press ◀ to return to the item you wish to change.
- If a power interruption occurs during timer recording, recording stops and your VCR shuts off. If power is restored within one hour, and it is before the recording end time, recording starts again from that point. If the interruption lasts for more than one hour, any presettings are erased and you must reset the time and date for your programs. Note that the tape counter returns to "0H00M00S".

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording. Daily recording records the same program every day of the week while weekly recording records the same program on the same day, every week.

1 Follows steps 1 to 3 in "Setting the Timer:" (page 18).

2 Press ▶.
The "DATE" position flashes.

3 Press ▲ or ▼ until the desired date appears.

Example: If today is November 27

Indicator	Setting
11/27 FRI	On 27th November
11/28 SAT	On 28th November
12/26 SAT	1 month later
EVERY SUN	Every Sunday
EVERY MON	Every Monday
EVERY SAT	Every Saturday
MON-FRI	Every day except Saturday and Sunday
MON-SAT	Every day except Sunday
SUN-SAT	Every day

4 Follow steps 6 to 13 in "Setting the Timer" (page 19)

To stop timer recording:
Press TIMER REC (ON/OFF).

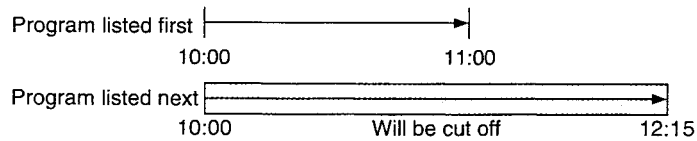
Buttons Operable during Timer Recording

TIMER REC (ON/OFF)	To stop timer recording.
COUNTER RESET	Reset the counter to "0H00M00S".
TV/VTR	Allows you to watch another program received on the TV.
DATA SCREEN	Allows you to display data screen information.
MENU	Allows you to check the timer settings.

Overlapping Timer Recordings

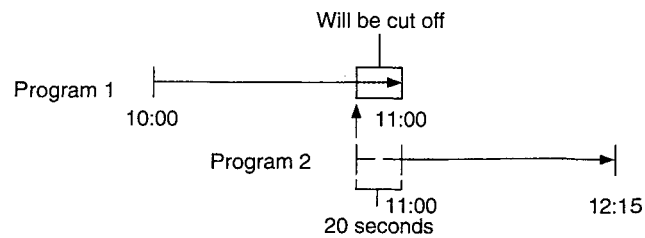
Case 1
If you preset two programs to record at the same time ...

The program listed first on the TIMER SET/CHECK display has priority over the other programs. The timer settings for lower priority programs are erased from the TIMER SET/CHECK display when recording begins for the first program.



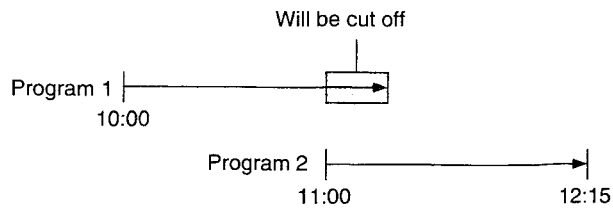
Case 2
If you preset program 2 to start recording at the same time you preset program 1 to finish recording ...

The last 20 seconds of program 1 is not be recorded because the VCR enters the recording pause mode for program 2 before program 1 is finished.



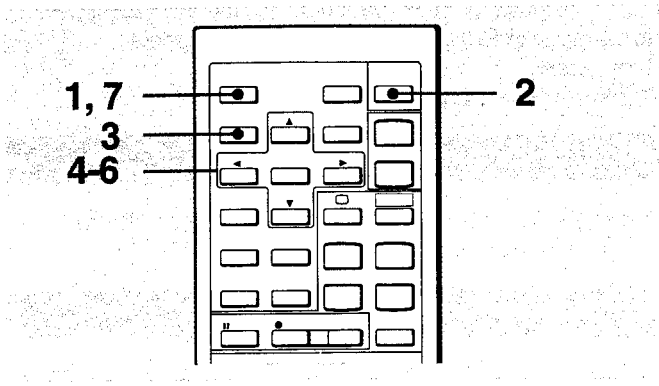
Case 3
If you set program 2 to start recording before program 1 is finished recording ...

Program 2 starts recording before program 1 has finished.



Checking the Timer Settings

You can display your timer settings to confirm the programs you wish to record.

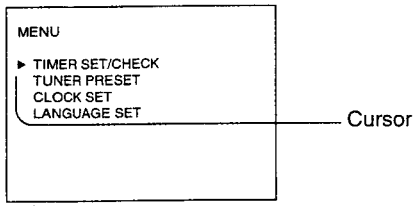


1 Press TIMER REC (ON/OFF).
The TIMER REC indicator in the display window turns off.

2 Press POWER.

3 Press MENU.
The main MENU appears.

4 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.



5 Press EXECUTE.
The TIMER SET CHECK display appears. Check your timer settings.

TIMER SET/CHECK			11/24		TUE
DATE		ON	OFF	CH	
▶ 11/27	FRI	20:00	21:55	26	SP
11/28	SAT	9:45	11:20	15	SP
12/1	TUE	13:00	14:00	LINE	SP
MON –	FRI	23:00	23:15	6	EP
MON –	SAT	8:15	8:30	15	SP
SUN –	SAT	18:00	19:00	10	SP
EVERY	SAT	20:00	20:54	8	SP
12/3	THU	10:00	12:00	50	EP

6 Press EXECUTE to return to the original screen.

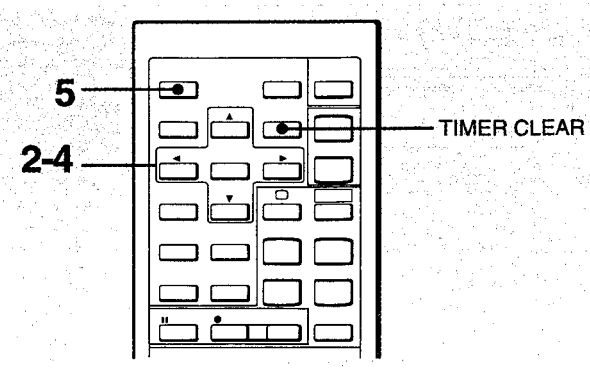
7 Press TIMER REC (ON/OFF).
The VCR returns to the timer recording standby mode.

Notes:

- If you preset a program to record only once, that setting is erased from the TIMER SET/CHECK display when recording has finished.
- To check the timer settings during timer recording, follow steps 3 to 6 above.

Changing or Canceling the Timer Settings

You can change or cancel the timer settings by referring to the TIMER SET/CHECK display.



1 Display the TIMER/SET CHECK menu on the TV screen by following steps 1 to 5 in "Checking the Timer Settings."

2 Move the cursor to the program you wish to change or cancel.

TIMER SET/CHECK			11/24		TUE
DATE		ON	OFF	CH	
11/27	FRI	20:00	21:55	26	SP
▶ 11/28	SAT	9:45	11:20	15	SP
12/1	TUE	13:00	14:00	LINE	SP
MON –	FRI	23:00	23:15	6	EP
MON –	SAT	8:15	8:30	15	SP
SUN –	SAT	18:00	19:00	10	SP
EVERY	SAT	20:00	20:54	8	SP
12/3	THU	10:00	12:00	50	EP

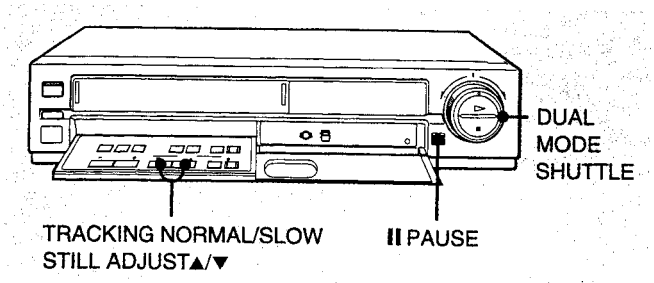
3 To make changes, press ◀ or ▶ to make the item to be changed flash, and then press ▲ or ▼ to make the changes.
To cancel, press TIMER CLEAR.

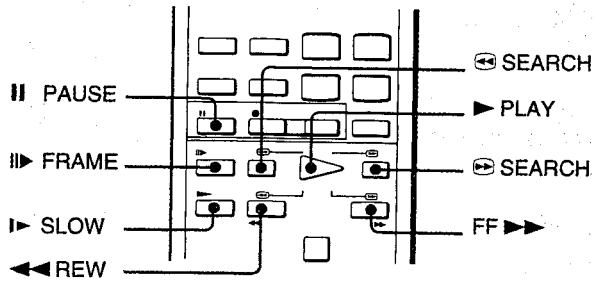
4 Press EXECUTE to complete the changes.
The original screen returns.

5 Press TIMER REC (ON/OFF) to return to the timer recording standby mode.

Variable Speed Playback

Using either the DUAL MODE SHUTTLE ring on your VCR, you can play back tapes at a variety of forward and reverse speeds. You can also freeze a picture using the PAUSE function.





Pausing the Picture

During playback, press II PAUSE to freeze the picture in one position.
To resume normal playback, press either the PLAY or PAUSE buttons.
If you leave your VCR in pause mode, normal playback resumes after approximately 5 minutes.

If bands appear on the top or bottom of the screen while in pause mode
Press I► SLOW to change to the slow-motion play mode, and adjust the picture with TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼.

If the picture shakes while in pause mode.
Adjust the picture with STILL ADJUST ▲/▼.

Picture Search

During playback, keep pressing ◄◄ REW (reverse direction) or FF ►► (forward direction). A high-speed picture without sound appears on the TV screen.
To resume normal playback, release the button at a desired scene.

Locked Picture Search

This feature allows you to lock in and view a high-speed picture while playing or pausing a tape.
During playback or in the pause mode, press ⏩ SEARCH (forward) or ⏪ SEARCH (reverse) on the Remote Commander.
To resume normal playback, press ► PLAY.

Slow-motion picture

During playback or in the pause mode, press I► SLOW.
To resume normal playback, press ► PLAY.

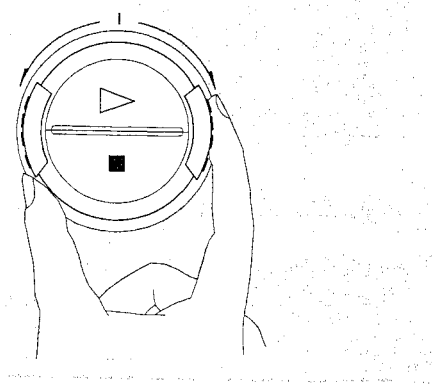
Frame-by-frame picture

In the pause mode, press II► FRAME to advance the picture one frame.
To resume normal playback, press ► PLAY .

Pausing the picture momentarily during fast-forward or rewind

During fast-forward, turn the DUAL MODE SHUTTLE ring on the VCR clockwise (►►) or press FF ►► on the Remote Commander.
During rewind, turn the DUAL MODE SHUTTLE ring counterclockwise (◄◄) or press ◄◄ REW on the Remote Commander.
To return to the fast-forward or rewind mode, release the ring or button.

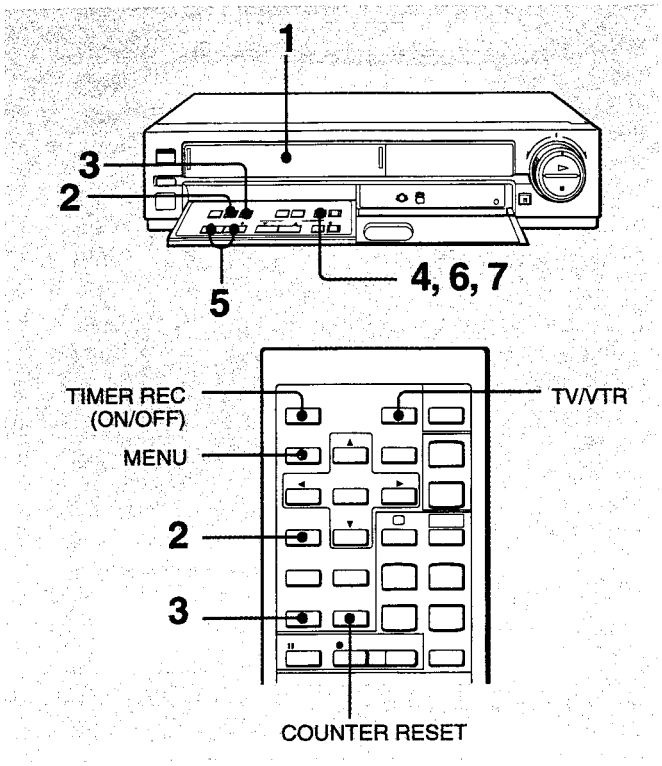
Playback at various speeds using the DUAL MODE SHUTTLE ring
You can also enjoy variable speed playback using the DUAL MODE SHUTTLE ring on the VCR.
In any playback mode, turn the DUAL MODE SHUTTLE ring in either the forward or reverse direction as shown. When you release the ring, normal playback resumes. (If you turn the ring in the pause mode, however, releasing the ring pauses a picture. To resume normal playback, press ► PLAY.)



Notes:
- Noise may appear during playback at various speeds.
- The playback picture at various speeds in SP mode may become black & white according to the type of TV you use.

Quick-Timer Recording

This function is convenient for recording programs without going through the entire timer setting procedure. You can set the recording duration in increments of 30 minutes, for up to 8 hours.
You can also use this function, during recording, to turn off the VCR after the program is over.



If you are in the middle of recording, do step 6 only.

1 Insert a cassette with a safety tab on it.

2 Press INPUT SELECT to light up the channel number indicator in the display window.

3 Press TAPE SPEED to select the tape speed: SP or EP.

4 Press QUICK TIMER on the VCR
The channel number flashes in the display window.
If a cassette with its safety tab removed has been inserted, the VCR ejects the cassette.

5 Press CHANNEL +/– on the VCR to select the channel for recording while the channel display is flashing in the display window.

6 Press QUICK TIMER within one minute after selecting the channel to start recording.
The REC indicator appears in the display window.

Note:
If you don't press QUICK TIMER within one minute after selecting the channel, the VCR shuts off.

7 Press QUICK TIMER to decide the recording duration. Each press on the button increases the recording duration in increments of 30 minutes as shown below.

→0:00 →0:30 →1:00 →····· →7:30 →8:00

Turn off the TV, and the VCR continues recording.
The recording duration decreases minute by minute until 0:00 appears, and then the VCR turns off automatically.

To stop quick-timer recording:
Press TIMER REC (ON/OFF).

To extend the recording duration during recording
Press QUICK TIMER the desired number of times. One press on the button increases the duration by 30 minutes.

If the VCR is in the standby mode for recording
Press TIMER REC (ON/OFF) to turn off the TIMER indicator in the display window and do steps 3 to 7.

Notes:
- You cannot change or erase timer settings during quick-timer recording.
- If a power interruption occurs during quick-timer recording, recording stops and the VCR shuts off. If the power interruption lasts less than one hour and power is restored before the recording end time, recording resumes from that instant.

Buttons operable during Quick-timer Recording

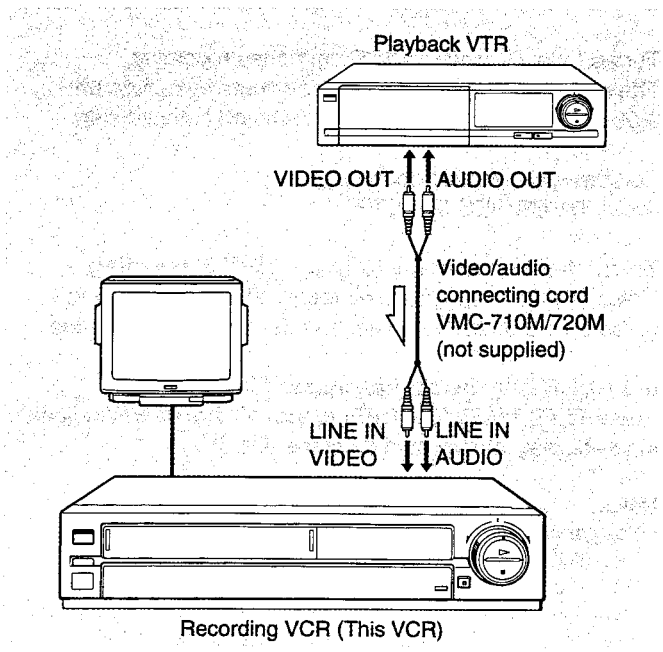
TIMER REC (ON/OFF)	To stop quick-timer recording.
COUNTER RESET	Reset the counter to "0H00M00S".
TV/VTR	Allows you to watch another program received on the TV.
DATA SCREEN	Allows you to display data screen information.
MENU	Allows you to check the timer settings.

Editing with Another VCR

Using this VCR as the Recording VCR

Connection

You can connect another VCR (the playback VCR) to the LINE IN VIDEO/AUDIO jacks on the back of this VCR.



1 Insert a cassette for recording into this VCR (used for recording).

2 Turn on the other VCR (the playback VCR) and insert the source cassette.

3 On this VCR, press TAPE SPEED to select the recording tape speed, SP or EP.

4 On this VCR, press INPUT SELECT to light up LINE on the VCR display.

5 On the other VCR, search for the desired playback start point and press II PAUSE to enter the playback pause mode.

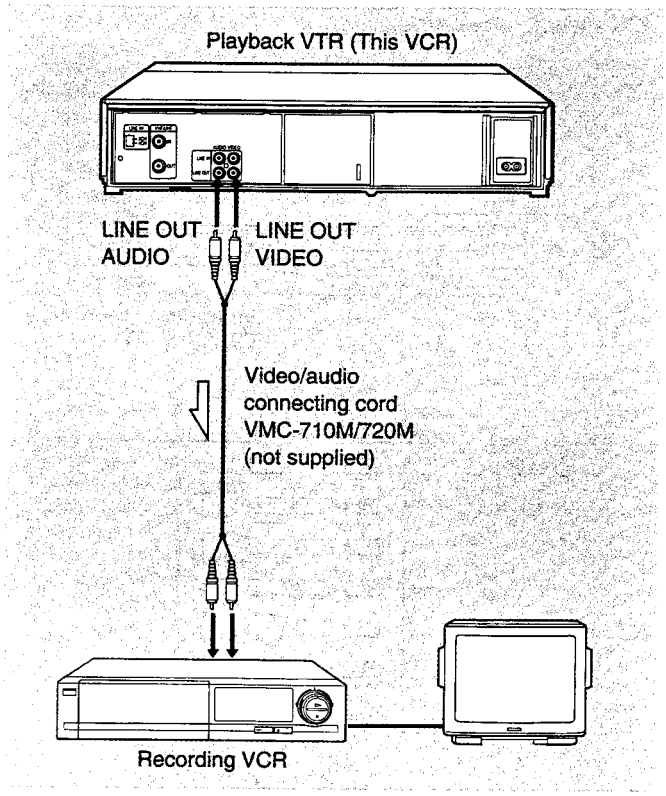
6 On this VCR, search for the desired recording start point, press II PAUSE on the Remote Commander and then the two ● REC buttons immediately to enter the recording pause mode.

7 Release the pause on the other VCR, and press II PAUSE on this VCR.
Recording of the signals from the other (playback) VCR starts.

8 When finished, press ■ STOP on both of the VCRs.

Using this VCR as the Playback VCR

You can connect another VCR (the recording VCR) to the LINE OUT VIDEO/AUDIO jacks at the rear of this VCR.



1 Turn on the other VCR (the recording VCR) and insert a cassette for recording.

2 Insert a source cassette into this VCR (the playback VCR).

3 On this VCR, search for the desired playback start point and press II PAUSE to enter the playback pause mode.

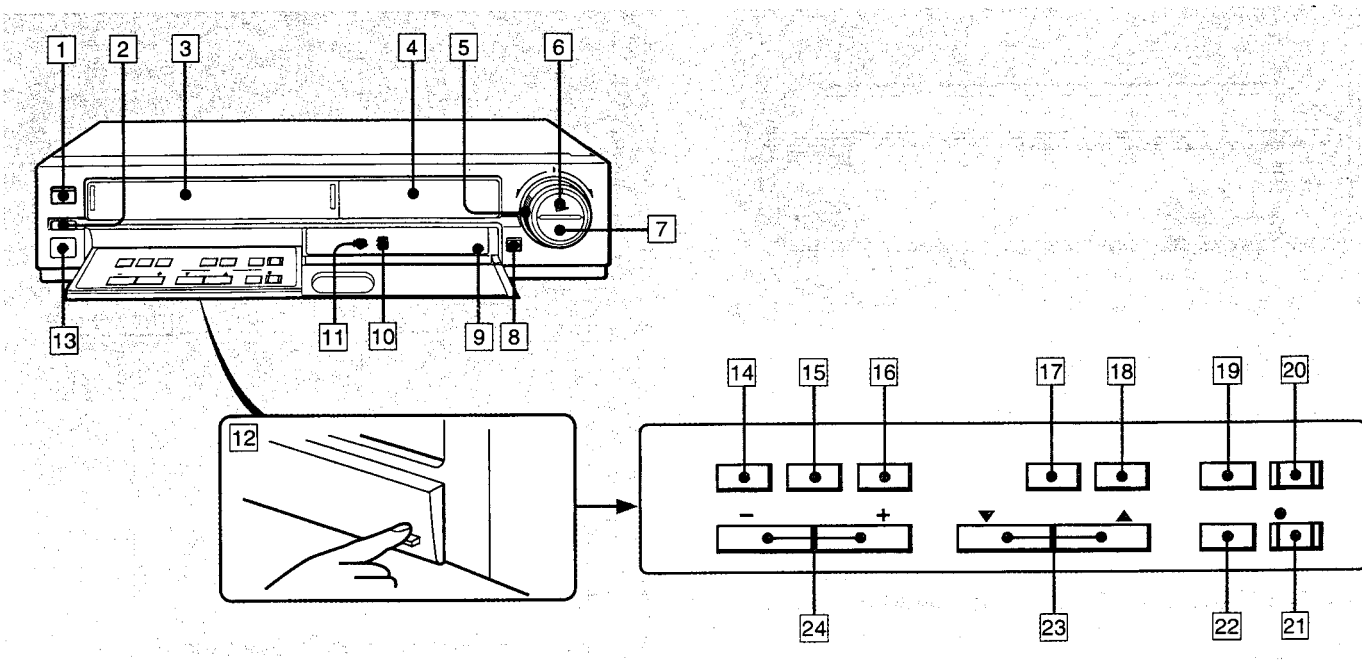
4 On the other VCR, search for the desired recording start point and enter the recording pause mode.

5 Press II PAUSE on this VCR and then release the recording pause mode of the other VCR.
Recording of the signals from the playback VCR starts.

6 When finished, press ■ STOP on both of the VCRs.

Identifying Parts and Controls

Front Panel



1 POWER ON/OFF switch and indicator (See page 6.)

2 ▲ EJECT button (See page 13.)

3 Cassette compartment (See page 13.)

4 Display window (See page 26.)

5 DUAL MODE SHUTTLE ring (See page 22.)

6 ► PLAY button (See page 14.)

7 ■ STOP button (See page 16.)

8 II PAUSE button (See page 16.)

9 CL (clear) button (See page 29.)

10 RENTAL PICTURE switch (See page 14.)

11 SHARPNESS SOFT/SHARP control (See page 14.)

12 ▼ OPEN - projection

13 Remote sensor

14 TV/VTR (antenna TV/VTR) button (See page 17.)

15 INPUT SELECT button (See pages 10 and 16.)

16 TAPE SPEED (SP/EP) button(See page 17.)

17 CLOCK/COUNTER button (See page 15.)

18 COUNTER RESET button (See page 15.)

19 QUICK TIMER button (See page 23.)

20 TIMER REC (ON/OFF) button (See page 19.)

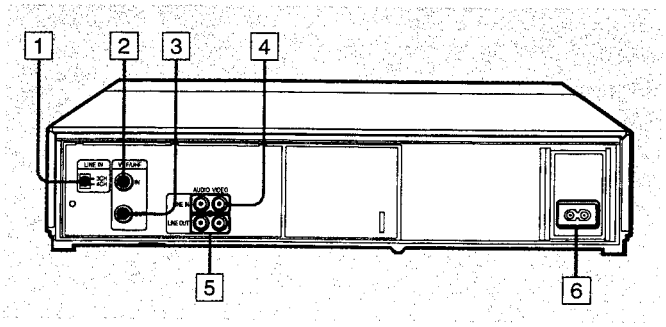
21 ● REC button (See page 16.)

22 TRACKING AUTO/MANUAL button (See pages 15 and 22.)

23 TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼ buttons (See pages 15 and 22.)

24 CHANNEL +/– buttons

Rear Panel



1 RF UNIT selector (See page 6.)

2 VHF/UHF IN connector (See page 4.)

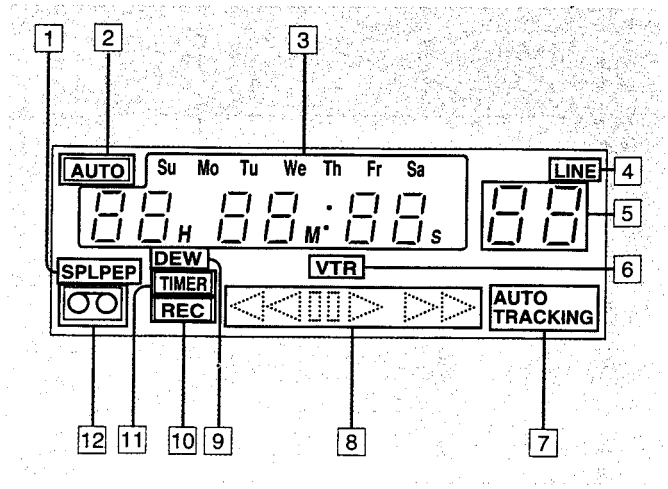
3 VHF/UHF OUT connector (See page 4.)

4 LINE IN AUDIO/VIDEO jacks (See page 5.)

5 LINE OUT AUDIO/VIDEO jacks (See page 4.)

6 AC IN connector (See page 3.)

Indicators in the Display Window



1 Tape speed indicator (See page 17.)

2 AUTO indicator (See page 14.)

3 Linear time counter and clock (See page 14.)

4 LINE indicator

5 Channel number (See page 10.)

6 VTR indicator (See page 10.)

7 AUTO TRACKING indicator (See page 15.)

8 Tape operation indicator (See page 14.)

9 DEW (moisture condensation) indicator

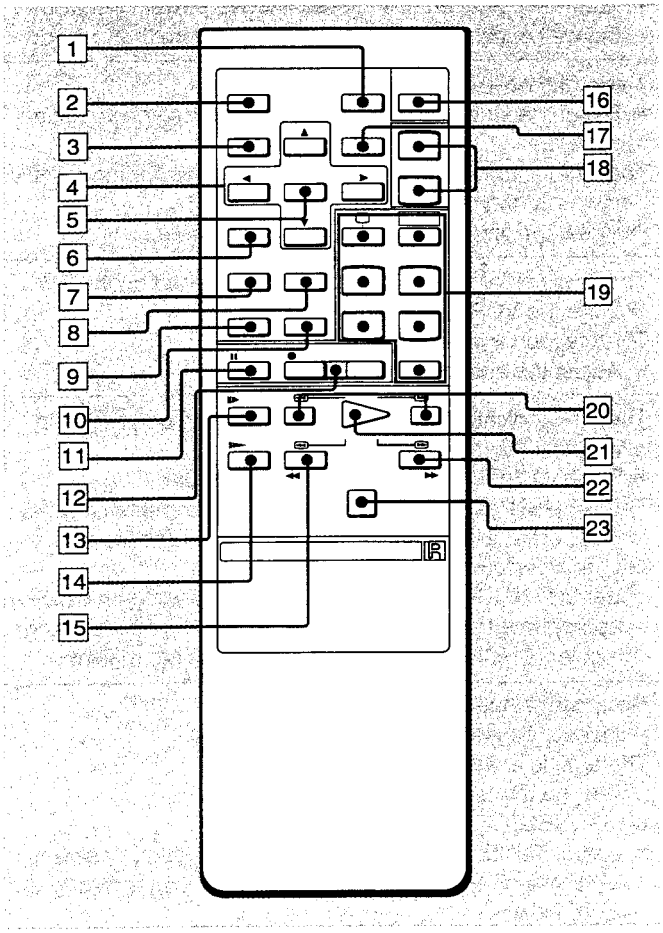
10 REC (recording) indicator (See pages 16 and 23.)

11 TIMER recording indicator (See page 19.)

12 Cassette indicator (appears when a cassette is loaded) (See page 13.)

Remote Commander

The buttons on the Remote Commander with the same name or mark as those on the VCR have the same function. You can also use the buttons in the "TV" section to remotely control Sony TVs with the R mark.



1 TV/VTR button (See page 17.)

2 TIMER REC (ON/OFF) button (See page 19.)

3 MENU button

4 ◀▲▶▼ Cursor buttons

5 EXECUTE button

6 INPUT SELECT button (See pages 10 and 16.)

7 DATA SCREEN button (See page 14.)

8 CLOCK/COUNTER button (See page 15.)

9 TAPE SPEED button (See page 17.)

10 COUNTER RESET button (See page 15.)

11 II PAUSE button (See page 16.)

12 ● REC buttons (See page 16.)

13 II▶ FRAME button (See page 22.)

14 I▶ SLOW button (See page 22.)

15 ◀◀ REW button (See page 14.)

16 POWER [on/off] button

17 TIMER CLEAR button (See page 21.)

18 CHANNEL +/– buttons (See page 7.)

19 TV control buttons (See page 7.)
POWER (on/off) button
TV power (on/off) button (Used when power for the TV is not turned on by pressing power.)
TV CHANNEL +/– buttons
TV VOL +/– buttons
TV/VIDEO button

20 ◀◀/▶▶ SEARCH buttons (See page 22.)

21 ▶ PLAY button (See page 14.)

22 ▶▶ FF button (See page 14.)

23 ■ STOP button (See page 14.)

Troubleshooting

Function	Symptom	Possible causes and remedies
Power	The POWER ON/OFF switch does not function	• The AC power cord not connected ➡ Connect the AC power cord. • The VCR is in standby mode for timer recording.
	The power is turned on, but the VCR does not operate.	• The safety device on the VCR has activated. ➡ Turn the power off, disconnect the AC power cord from the wall outlet, and leave the VCR for more than 1 hour.
Clock and Timer	The clock has stopped and "–:––" lights up.	• There has been a power interruption. ➡ Reset the time and date clock, and timer settings. (See page 8.) • The VCR is disconnected from the wall outlet for more than 1 hour, and then reconnected. ➡ Reset the time and date clock. (See page 8.)
TV reception and recording	TV program is not clearly displayed on the TV screen.	• The channel for the VCR is not correctly tuned on the TV. ➡ Tune the VCR to the TV. (See page 6.) • TV reception is weak. ➡ Adjust the antenna.
	No picture on the TV screen.	• The VTR indicator in the display window does not light up when selecting a TV program on the VCR. ➡ Press TV/VTR to light up the VTR indicator. • The RF UNIT selector is not set to the appropriate channel for your area, either channel 3 or 4, or the video input has not been selected on the monitor. ➡ Set the RF UNIT selector to 3 or 4. depending on which is appropriate for your area. (See page 6.) If you are using a color monitor, select the video input on the monitor.
	Recording cannot be done	• No cassette has been inserted. ➡ Insert a cassette with the safety tab on it. • The tape is at its end. ➡ Rewind the tape. • INPUT SELECT is not correctly. ➡ Select TUNER when recording a TV program, or select LINE when recording from another VCR connected to the LINE IN jack.
Playback	The playback picture is not clear.	• The RF UNIT selector is not set to the appropriate channel for your area, either channel 3 or 4, or the video input has not been selected on the monitor. ➡ Set the RF UNIT selector to 3 or 4. (See page 6.) If you are using a color monitor, select the video input on the monitor. • A tape recorded on another VCR is being played back. ➡ Adjust the tracing using TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼ buttons. (See page 15.) • The video heads are dirty. ➡ Clean the heads using the Sony T-25CL video head cleaning cassette. For details on cleaning, refer to the instructions provided with the cleaning cassette. If the cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony service facility. (Do not use a commercially available wet-type cleaning cassette, as it may damage the video heads.)

Function	Symptom	Possible causes and remedies
Playback	The playback picture is not very clear.	• The video heads are worn out. ➡ Consult your nearest Sony service facility. • Poor recording quality ➡ Select RENTAL PICTURE. (See page 15.) • The sharpness of the picture is not adjusted correctly. ➡ Adjust SHARPNESS. (See page 15.)
	The picture moves vertically during picture search mode.	• The vertical hold of the TV is not adjusted correctly. ➡ Adjust the vertical hold control on the TV or color monitor.
	The sound drops out	• The tape is defective. ➡ Use a new tape.
Timer recording	Timer settings cannot be made.	• The correct time has not been preset. ➡ Set the current time and date on the clock. (See page 8.)
	The TIMER indicator does not light even though you press TIMER REC (ON/OFF).	• No cassette has been inserted. ➡ Insert a cassette with safety tab on it. • The tape is at its end. ➡ Rewind the tape. • No setting is made for timer recording. ➡ Set your desired program for timer recording. (See page 18.)
	The cassette is ejected when you press TIMER REC (ON/OFF).	• The safety tab of the cassette has been removed. ➡ Cover the safety tab slot with plastic tape, or use another cassette with a safety tab.
	Timer recording was not made.	• There has been a power interruption lasting approximately one hour or more. • The TIMER REC (ON/OFF) was not pressed.
Data Screen	The data screen does not appear.	• The data screen is off. ➡ Press DATA SCREEN.
Others	Cassette cannot be inserted.	• A cassette has already been inserted. ➡ Eject the cassette.
	The Remote Commander does not operate.	• The batteries are low ➡ Replace the batteries.
	The tracking indicator does not appear on the screen.	• The data screen is off. ➡ Press DATA SCREEN. • The recording condition of the tape is very poor and tracking cannot be adjusted.
	The DEW indicator flashes in the display window and no buttons except for EJECT and POWER function.	• Moisture condensation has occurred. ➡ Remove the cassette and leave the VCR turned on for approximately one hour.
	None of the buttons function.	• Internal problem ➡ Press the CL button inside the drop-down panel of the VCR. (Note that the time and date clock settings and/or the timer settings are cleared.)

Specifications

System

Channel coverage	VHF channels 2 to 13 UHF channels 14 to 69 CATV channels A-6 to A-1, A to W, W+30 to W+84

Inputs and outputs

LINE IN	VIDEO IN (phono jack) (1) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (1) Input level: –7.5 dBs (0 dBs = 0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT	VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (1) Rated output level: –7.5 dBs at load Impedance: 47 kilohms Output impedance: less than 10 kilohms

General

Power requirements	Type 1: 120 V AC, 60 Hz Type 2: 110-240 V AC, 50/60 Hz
Power consumption	Type 1: 20 W Type 2: 20 W
Operating temperature range	5° C to 40° C (41° F to 104° F)
Storage temperature range	–20° C to 60° C (–4° F to 140° F)
Dimensions	430 x 91 x 348 mm (w/h/d) (17 x 3 1/2 x 13 11/16 inches) including projecting parts and controls
Weight	5.4 kg (12 lb 9 oz)

Accessories supplied

Wireless Remote Commander (1)
Size AA (R6) batteries (2)
75-ohm coaxial cable with F-type connectors (1)
AC power cord (1)
AC plug adaptor (Type 2 model only) (1)
Antenna connector (1)

Design and specifications are subject to change without notice.

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